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Arthroscopic Medial Meniscus Transplant Utilizing a Multi-Technique Fixation

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ABSTRACT

Arthroscopic medial meniscus transplantation can be a daunting procedure for even the most skilled surgeon. While all-inside suture fixation devices have improved, the ability to successfully perform this procedure via arthroscopy is reliant upon the surgeon's ability to utilize a variety of fixation techniques. Based upon the review of the literature, this paper is the first of it's kind describing the methodology and algorithm for completing an arthroscopic medial meniscus transplant using four techniques.

BACKGROUND

Most medial meniscal transplants are performed in open or mini open manner. Reasons for this include: technical difficulty as well suture fixation methodology.

OSTEOPATHIC PRINCIPLE

By restoring the function of the meniscus and augmenting the repair with marrow stimulation, the body is able to restore function and allow for self-healing.

GRAFT PREPARATION

Graft preparation is paramount for arthroscopic medial meniscal transplant. In Figure A, the graft is tagged anteriorly and posteriorly at the root attachments. This aids in shuttling in through the lateral portal.

Figure A

TECHNIQUES

-First the graft is shuttled in from the lateral portal by pulling the posterior horn suture through the tunnel
-Once docked in place, the graft is pushed across to the mid portion of the capsule using a suture manipulator
-The anterior root is then docked by pulling the sutures through the tunnel
-Starting posteriorly an all inside technique is performed up to the junction of the mid-body
-At the mid-body an inside out suture technique is utilized with the stitches tied over the capsule
-The anterior horn of the meniscus is fixated using outside in technique with an 18-gauge spinal needle and suture shuttler. These stitches are again tied over the capsule

Figures B, C, and D denote the techniques used in fixation

B: All inside

C: Inside out

D: Outside in

RESULTS

Figure E demonstrates the final construct with an anatomic repair of the meniscus. Marrow stimulation was performed at the inter condylar notch for improved healing.
The patient was non-weight bearing for 6 weeks in a hinged knee brace, allowing motion from 0-90 degrees.

Figure E

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